

Holographic Waveguided See-Through Display, Phase I

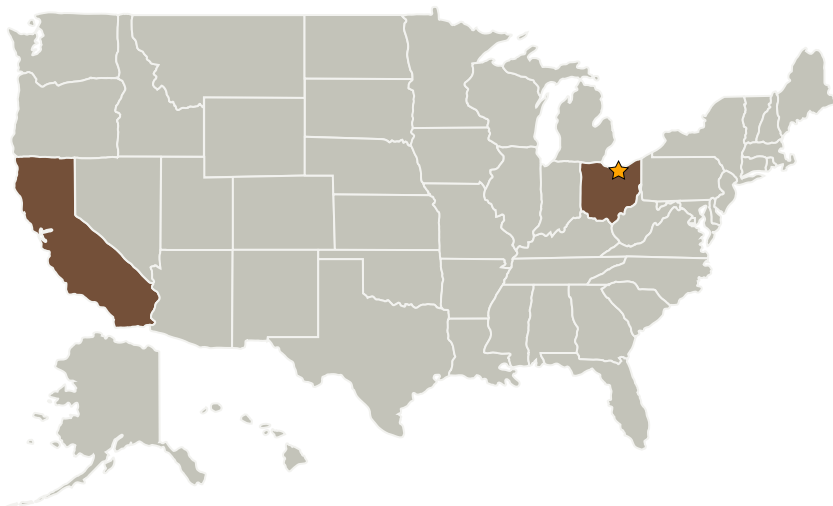
Completed Technology Project (2008 - 2008)



Project Introduction

To address the NASA need for lightweight, space suit-mounted displays, Luminet proposes a novel Holographic Waveguided See-Through Display. Our proposed Holographic Waveguided See-Through Display (HoWSD) will integrate highly selective waveguiding Bragg holograms, Luminet diffuser technology, a unique LCD backlight into a helmet-mounted display (HMD) that will provide easy- to-access clearly visible information to astronauts during extravehicular activity (EVA). The proposed HoWSD incorporates a unique design and Luminet novel diffusers into a functional HMD, which enables us to meet NASA goals for a functional, unobtrusive display device that provides information to astronauts during EVA. HoWSD offers a compact, low-profile display with high brightness and contrast, which is fully see-through and high resolution. In Phase I Luminet will demonstrate the feasibility of a see-through helmet-mounted display that can operate under various illumination levels, and which will prepare us for Phase II. In Phase II, Luminet plans to develop a fully-functional rugged prototype and demonstrate HoWSD functionality. The demonstrated results will offer NASA the capability of incorporating a non-obtrusive, rugged, wide field-of-view display into a space suit helmet designed for EVAs.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Luminit, LLC	Supporting Organization	Industry	Torrance, California

Primary U.S. Work Locations

California	Ohio
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Dmitry N Voloschenko

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.2 Extravehicular Activity Systems
 - └ TX06.2.3 Informatics and Decision Support Systems